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CLAIM AMENDMENTS

1        1. (Original) A method of processing a signal with frequencies within a  
2 frequency band having a bandwidth B, the signal including a plurality of messages,  
3 each message having frequencies within a unique frequency band, where the frequency  
4 bands of the plurality of messages occupy the bandwidth B, and where messages with  
5 adjacent frequency bands may have different bandwidths, said method comprising:

6                receiving the signal;

7                separating the signal into groups of messages having frequency bands  
8 with the same bandwidth, all messages in any group occupy non-adjacent frequency  
9 bands;

10               combining the messages of each group;

11               applying each combined group of messages to a separate amplifier to  
12 amplify each combined group of messages; and

13               separating each amplified group of messages into separate messages.

1        2. (Original) A method as claimed in claim 1, further comprising transmitting  
2 each separated message to a respective receiving station.

1           3. (Original) A method of communicating a plurality of messages from an  
2 originating station, through a relaying station, to a plurality of receiving stations, said  
3 method comprising transmitting the plurality of messages from the originating station to  
4 the relaying station in a signal with frequencies within a frequency band having a  
5 bandwidth B, with each message having frequencies within a unique frequency band,  
6 where the frequency bands of the plurality of messages occupy the bandwidth B, and  
7 where messages with adjacent frequency bands may have different bandwidths; and at  
8 the relaying station:  
9               separating the messages into groups of messages having the same  
10 bandwidth, where all messages in any group occupy non-adjacent frequency bands;  
11               combining the messages of each group;  
12               applying each combined group of messages to a separate amplifier to  
13 amplify each combined group of messages;  
14               separating each amplified group of messages into separate messages;  
15 and  
16               transmitting each separated message to a respective receiving station.

1           4. (Original) An article, comprising a storage medium having instructions  
2 stored thereon, the instructions when executed processing a signal with frequencies  
3 within a frequency band having a bandwidth B, the signal including a plurality of  
4 messages, each message having frequencies within a unique frequency band, where  
5 the frequency bands of the plurality of messages occupy the bandwidth B, and where  
6 messages with adjacent frequency bands may have different bandwidths, the  
7 instructions processing the signal by receiving the signal; separating the signal into  
8 groups of messages having frequency bands with the same bandwidth, where all  
9 messages in any group occupy non-adjacent frequency bands; combining the  
10 messages of each group; applying each combined group of messages to a separate  
11 amplifier to amplify each combined group of messages; and separating each amplified  
12 group of messages into separate messages.

1           5. (Original) An article as claimed in claim 4, wherein the instructions when  
2 executed further transmit each separated message to a respective receiving station.

1       6. (Original) An article, comprising a storage medium having instructions  
2       stored thereon, the instructions when executed communicating a plurality of messages  
3       from an originating station, through a relaying station, to a plurality of receiving stations,  
4       the instructions communicating the messages by transmitting the plurality of messages  
5       from the originating station to the relaying station in a signal with frequencies within a  
6       frequency band having a bandwidth B, with each message having frequencies within a  
7       unique frequency band, where the frequency bands of the plurality of messages occupy  
8       the bandwidth B, and where messages with adjacent frequency bands may have  
9       different bandwidths; and at the relaying station separating the messages into groups of  
10      messages having the same bandwidth, where all messages in any group occupy non-  
11      adjacent frequency bands; combining the messages of each group; applying each  
12      combined group of messages to a separate amplifier to amplify each combined group of  
13      messages; separating each amplified group of messages into separate messages; and  
14      transmitting each separated message to a respective receiving station.

1           7. (Original) A apparatus for processing a signal with frequencies within a  
2 frequency band having a bandwidth B, the signal including a plurality of messages,  
3 each message having frequencies within a unique frequency band, where the frequency  
4 bands of the plurality of messages occupy the bandwidth B, and where messages with  
5 adjacent frequency bands may have different bandwidths, said apparatus comprising:  
6           an antenna to receive the signal;  
7           a first demultiplexor to separate the messages;  
8           a filter unit to filter and group the separated messages into groups of  
9 messages having the same bandwidth, where all messages in a group occupy non-  
10 adjacent frequency bands;  
11           a combining circuit to combine the messages of each group;  
12           an amplifier for each group of messages to amplify each combined group  
13 of messages; and  
14           a second demultiplexor to separate each amplified group of messages into  
15 separate messages.

1           8. (Original) An apparatus as claimed in claim 7, wherein the amplifier  
2 comprises a traveling wave tube amplifier.

1           9. (Original) An apparatus as claimed in claim 7, further comprising a  
2 transmitting antenna to transmit the separated messages.

1           10. (Original) An apparatus as claimed in claim 7, comprising an earth-  
2 orbiting satellite.

1           11. (Original) A communication system, comprising:  
2                   an originating station to transmit a signal including a plurality of messages,  
3                   the signal having frequencies within a frequency band having a bandwidth B, with each  
4                   message having frequencies within a unique frequency band, where the frequency  
5                   bands of the plurality of messages occupy the bandwidth B and where messages with  
6                   adjacent frequency bands may have different bandwidths;  
7                   a plurality of receiving stations to receive the plurality of messages; and  
8                   a relaying station including an antenna to receive the signal, a first  
9                   demultiplexor to separate the messages, a filter unit to filter and group the separated  
10                  messages into groups of messages having the same bandwidth, where all messages in  
11                  any group occupy non-adjacent frequency bands, a combining circuit to combine the  
12                  messages of each group, an amplifier for each group of messages to amplify each  
13                  combined group of messages, a second demultiplexor to separate each amplified group  
14                  of messages into separate messages, and means for transmitting the separated  
15                  messages to their respective receiving stations.

1           12. (Original) An apparatus as claimed in claim 11, wherein the amplifier  
2           comprises a traveling wave tube amplifier.

1           13. (Original) A communication system as claimed in claim 11, wherein said  
2           relaying station comprises an earth-orbiting satellite.